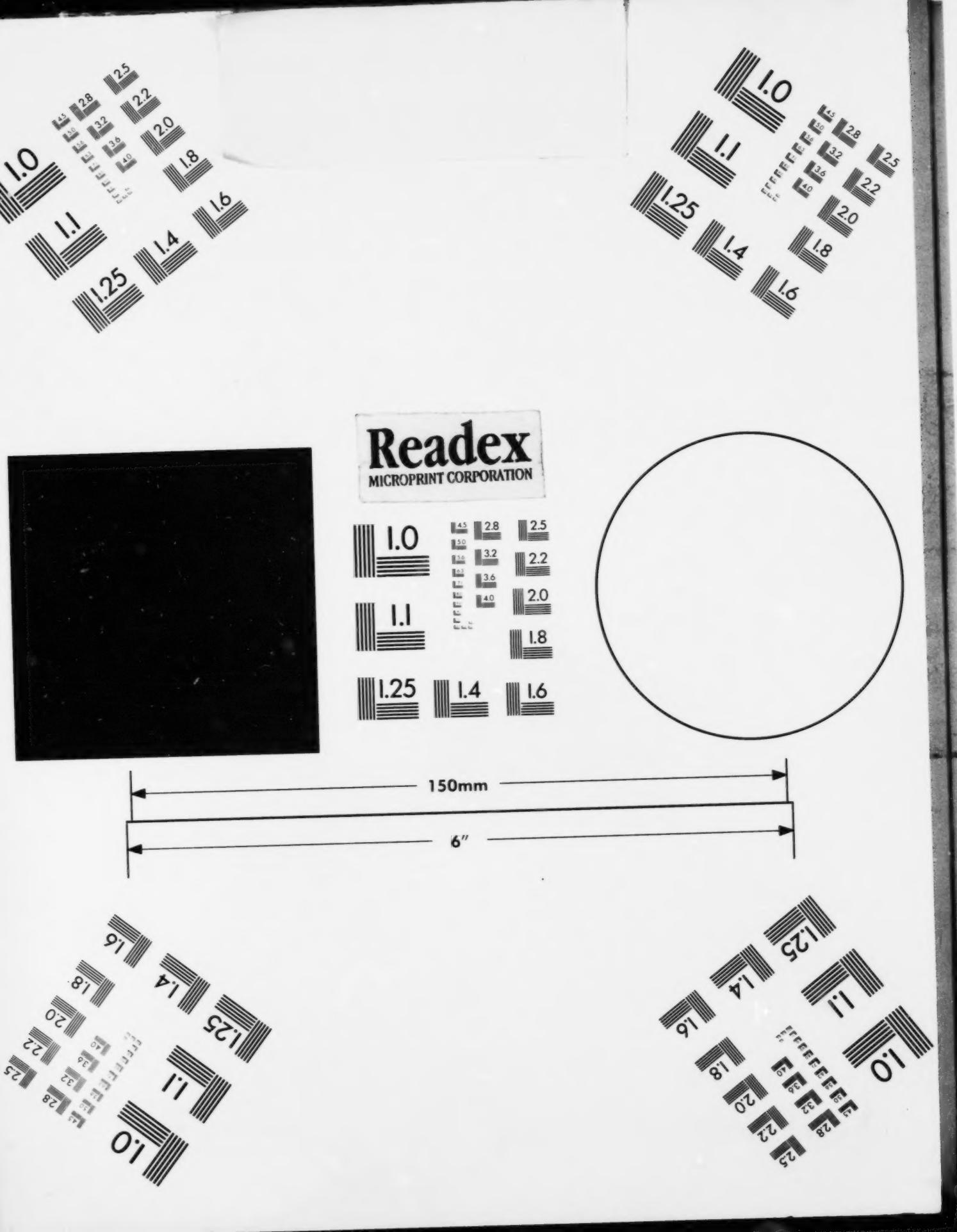
Readex
MICROPRINT CORPORATION
1.0
1.1
1.25
1.4
1.6
2.8
3.2
3.6
4.0
2.5
2.2
2.0
1.8
150mm
6"

UN

UNITED NATIONS

Framework Convention on Climate Change

Distr.
GENERAL

FCCC/AGBM/1996/2
12 February 1996

Original: ENGLISH

AD HOC GROUP ON THE BERLIN MANDATE
Third session
Geneva, 5-8 March 1996
Item 4 (b) of the provisional agenda

STRENGTHENING THE COMMITMENTS IN ARTICLE 4.2(A) AND (B)

POLICIES AND MEASURES

Note by the secretariat

CONTENTS

		Paragraphs	Page
I.	INTRODUCTION	1 - 11	3
A.	Mandate	1	3
B.	Scope of the note	2 - 8	3
C.	Possible action by the Ad Hoc Group on the Berlin Mandate	9 - 11	4
II.	SECTORAL POLICIES AND MEASURES	12 - 54	5
A.	Energy and transformation industries	12 - 20	5
B.	Industry	21 - 26	7
C.	Residential, commercial and institutional	27 - 31	8
D.	Transportation	32 - 39	9
E.	Industrial processes	40 - 42	10

GE.96-60577

		Paragraphs	Page
F.	Agriculture	43 - 46	11
G.	Land use change and forestry	47 - 51	11
H.	Waste management and sewage treatment	52 - 54	12
III.	CROSS-SECTORAL ECONOMIC INSTRUMENTS	55 - 58	13

Annex

Sectoral "policy objectives" as set out in document FCCC/AGBM/1995/6 15

I. INTRODUCTION

A. Mandate

1. The Ad Hoc Group on the Berlin Mandate (AGBM), at its second session, requested the secretariat, drawing on national communications,* available in-depth review reports, the Second Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) and comments from Parties, to develop, for consideration at the third session, a document that would follow up on document FCCC/AGBM/1995/6 (see FCCC/AGBM/1995/7, para. 30).

B. Scope of the note

2. This note has been prepared in response to the above request. It seeks to assist the AGBM in its consideration of the strengthening of the commitments in Article 4.2(a) and (b) through the elaboration of policies and measures. It is structured according to the sectoral classifications used in document FCCC/AGBM/1995/6. For each sector, there is a brief review of:

(a) The relative contribution of that sector to the problem, drawn from document FCCC/SB/1996/1;

(b) An overview of the policy response by Annex I Parties, drawing on documents FCCC/AGBM/1995/6 and A/AC.237/81;

(c) An estimate of the potential to reduce emissions in the sector, as identified by the IPCC, usually on a global scale (recognizing that the potential in Annex I Parties would be more relevant but is not always available); and

(d) Potential areas for future analysis, assessment and action by the AGBM, as identified in submissions from Parties to the secretariat (including statements to the AGBM) and by the IPCC.

Cross-sectoral economic instruments are considered in a final section.

3. On this basis, a number of suggestions are offered or questions posed, bearing in mind that the purpose of the exercise is to identify policies and measures that would be elaborated in a protocol or another legal instrument. These suggestions and questions have been developed in an attempt to give effect to the conclusion reached at the second session that the range of policies and measures under consideration needs to be narrowed down, but

---

* The term "national communications" includes communications from the regional economic integration organization included in Annex I to the Convention.

not closed off, and that this narrowing down exercise would have to advance at this session if the process is to remain on track to the Conference of the Parties at its third session (COP 3) (FCCC/AGBM/1995/7, para. 23).

4. The note attempts to suggest possible directions or areas of emphasis that could help the AGBM in focusing its analysis and assessment of policies and measures and in the negotiation of a protocol or another legal instrument. It does not analyse or assess policies and measures from a technical or economic perspective. Nor does it address the economic and social impacts of policies and measures. Such assessments could be advanced once the range of policies and measures has been narrowed.

5. Document FCCC/AGBM/1995/6 also included, within each sector, a series of "policy objectives". This note refers to the concept of policy objectives as a means of conceptualizing or categorizing policies and measures and as a possible bridge between the general commitment to adopt policies and take measures contained in Article 4.2 and the need to elaborate policies and measures to strengthen that commitment, as provided in the Berlin Mandate (FCCC/CP/1995/Add.1., decision 1/CP.1). The policy objectives set out in document FCCC/AGBM/1995/6 are listed by sector, in the annex to the present note.

6. In view of the importance of technology development and diffusion for reducing emissions, document FCCC/SBSTA/1996/4 and Add.1 on technology inventory and assessment is also relevant to this agenda item and may be read in conjunction with this note. The informal workshop on policies and measures, to be convened on 4 March, will also contribute to the discussion of the AGBM.

7. The discussion of policies and measures in this note is consistent with the approach to a protocol proposed by the European Community at the second session of the AGBM (see FCCC/AGBM/1995/MISC.1/Add.3, pp. 33-42). However, it is not limited to that approach.

8. The Annex I Expert Group on the UNFCCC has submitted to the secretariat a list of policies and measures for its "common action study", along with scoping papers of work being undertaken on each measure in the first tranche of policies and measures (see FCCC/AGBM/1996/MISC.1). The detailed analytical results from these studies will be made available to the AGBM as work is completed by that Expert Group.

C. Possible action by the Ad Hoc Group on the Berlin Mandate

9. If some of the suggestions regarding policies and measures for analysis and assessment, and potentially for negotiation, are found useful, they could be reflected in the conclusions of the session as guidance for further work and next steps. For example, it may be useful for the AGBM, at this session:

- To identify a number of sectors for priority attention based on the relative contribution of each sector to the problem, the projected sectoral growth in emissions, the degree of relevance of the sector for Annex I Parties in general, and/or the interest of these Parties in moving ahead in the sector;

- To agree on a provisional, balanced list of possible policies and measures, perhaps within the context of priority sectors, that merit further, more detailed attention.

10. Some of the suggestions regarding possible approaches to policies and measures could also be addressed. For example, is the concept of "policy objectives" as used in the note a useful device for organizing future work that would benefit from further study and refinement? Do some sectors lend themselves to approaches such as agreed best practice guidelines or research and development as opposed to those which may demand common policies and measures? Would further work on technology assessment be useful?

11. . The AGBM may wish to make the best possible use of the capacities of the secretariat and of other organizations to advance work in the short time available before the next session, bearing in mind that COP 2 "will be an opportunity to take stock of the overall process and to intensify the efforts to adopt a protocol or another legal instrument at COP 3" (FCCC/AGBM/1995/2, para. 19 (c)).

II. SECTORAL POLICIES AND MEASURES

A. Energy and transformation industries

12. The energy and transformation industries are the largest single source of carbon dioxide (CO_2) emissions from Annex I Parties, accounting for over one third of the total. There are, however, important differences between Parties that are explained by different fuel mixes, ownership regimes and levels of electricity imports.

13. According to document FCCC/AGBM/1995/6, Annex I Parties have begun taking action to address a number of policy objectives in this sector. More than half these Parties report measures to support research, development and implementation of renewable energy technologies. A number of Annex I Parties have also taken steps to promote new combined heat and power generation. In addition, a number of Annex I Parties report on steps to increase access to the power grid for small, independent power producers. Relatively few, however, report taking action to improve the efficiency of existing power generation, to promote least cost planning/integrated resource planning in this sector, or to address emissions from energy transmission and distribution.

14. The IPCC indicates that significant reductions in greenhouse gas emissions are possible in this sector. Working Group II concludes that deep reductions of greenhouse gas (GHG) emissions from the energy supply sector are technically possible within 50 to 100 years (WGII, Report, p. 19-3).*

15. One source of these reductions is improved efficiency in electric power generation. The IPCC states that "the efficiency of power production can be increased from the present world average of about 30 per cent to more than 60 per cent in the longer term", and notes that "the use of combined heat and power production ... offers a significant rise in fuel conversion efficiency" (WGII, Summary, p. 14). The other major potential source of reductions is fuel switching. Working Group II concludes that "in the longer term, renewable sources of energy could meet a major part of the world's demand for energy" (WGII, Summary, p. 14), while Working Group III states that governments could consider "... implementing cost-effective fuel switching measures from more to less carbon-intensive and carbon-free fuels such as renewables ..." (WGIII, Summary, p. 3).

16. Similarly, a number of the submissions by Parties to the secretariat identify improving the efficiency of electricity generation as meriting examination. Fuel switching, with emphasis on the development and promotion of renewable energy, is also highlighted by Parties. The other priorities mentioned in submissions to the secretariat include reducing fugitive emissions from fossil fuel production and promoting least cost planning.

17. The AGBM may wish to consider the most appropriate and effective policies and measures to increase the efficiency of power production. In this context, it could be useful to distinguish between the short to medium term and the longer term, especially in looking at the role of combined heat and power production and at setting the stage for capital stock turnover. Although addressed in a later section, the use of market signals and the removal of subsidies may be important in this regard.

18. A second potential area of focus for the AGBM could be approaches to accelerating uptake and promoting the development and commercialization of renewable energy. IPCC Working Group II notes that the availability, cost and penetration of technologies like renewables will strongly depend on improving market efficiency, internalizing external costs and accelerating research, development and demonstration, and providing temporary incentives for early market development of these technologies as they approach commercial

---

* Documents are referred to as follows:

WGII, Report: "Report forming part of the contribution of Working Group II to the IPCC Second Assessment Report", vols. I and II.

WGII, Summary: "Summary for policymakers: Scientific and Technical Analysis of Impacts, Adaptations, and Mitigation of Climate Change" IPCC Working Group II.

WGIII, Summary: "Summary for policymakers: The Economic and Social Dimensions of Climate Change" IPCC Working Group III.

readiness (WGII, Report, p. 19-3). Policies and measures designed to encourage the use of biofuels, non-carbon fuels or less carbon-intensive fuels might also be examined.

19. A related area the AGBM may wish to address in the field of energy is research and development (R & D). For example, could international agreement be reached on energy R & D priorities? Is there potential for strengthening international cooperation in the demonstration and commercialization of renewable energy technologies? Could Parties reach agreement on guidelines for government procurement policies that would promote renewable energy?

20. Finally, the reduction of emissions from the production and distribution of fossil fuels is a promising area where some early action may be possible (for example, methane leakage/release).

B. Industry

21. Industry as an end-user of energy accounts for about one fifth of CO_2 emissions from Annex I Parties. These Parties have reported on a considerable number and diversity of policies and measures in this sector, especially in the areas of incentives for energy efficiency and renewable energy, fuel switching, voluntary agreements and information programmes.

22. The IPCC, while noting that, in most industrialized countries, industrial sector energy-related greenhouse gas emissions are expected to be stable or to decrease as a result of industrial restructuring and technological innovation, estimates "the short-term potential for energy-efficiency improvements in the manufacturing sector of major industrial countries" at 25 per cent while "the potential for greenhouse gas emission reductions is larger" (WGII, Summary, p. 14).

23. The IPCC Working Group II report concludes that:

> "Different strategies for reducing greenhouse gas emissions deserve attention, particularly fuel substitution – with increased use of lower-carbon fuels, biomass and renewable energies in industrial processing – and efficiency improvement of energy supply (e.g., cogeneration) and energy use in industrial processes, including less materials-intensive production methods and renewable feedstocks and raw materials. Implementation would be most cost-effective during normal capital stock turnover" (WGII, Report, p. 20-3).

24. A number of Parties, in their submissions, indicate that the industrial sector merits attention in the AGBM process. There is particular interest in assessing the potential for voluntary agreements to reduce CO_2 emissions in this sector. Moreover, the IPCC indicates that Governments could consider the pursuit of "voluntary programmes and negotiated agreements with industry" (WGII, Summary, p. 18).

25. The AGBM may wish to consider how best to promote further action in this sector, particularly in the light of competitiveness concerns. If voluntary agreements are of interest, the AGBM may wish to consider whether particular industrial sectors should be the subject of early action. Would there be a role for agreed guidelines for voluntary programmes to ensure active, credible and effective industry participation? Further, the AGBM could assess whether there are any industrial sectors where it makes sense to pursue voluntary programmes or negotiated agreements at an international level. If so, how could these be developed?

26. The AGBM may also wish to consider alternative policy approaches, such as the use of regulations and/or economic instruments.

C. Residential, commercial and institutional

27. The residential, commercial and institutional sector accounts for approximately one eighth of CO_2 emissions from Annex I Parties. The national communications from these Parties reveal that this sector has been an area of initial focus for policies and measures. Most of the action reported has been directed towards improving the energy efficiency of new buildings and of new appliances and equipment, with less attention paid to energy efficiency in existing buildings. IPCC Working Group II has concluded that the technical and economic potential for energy savings, and hence for CO_2 emission reductions, remains high on a global scale, many cost-effective technologies are available (WGII, Report, pp. 22-2-3).

28. In this sector, the measure most commonly identified by Parties as a focus for action is the development of energy efficiency standards for appliances and products. The same measure has also been identified by the IPCC.

29. If energy efficiency standards for products and equipment are deemed to merit further attention, the AGBM may wish to consider:

- Whether to aim at an international agreement on the principle of adopting minimum efficiency standards, on specific agreed standards, on methodological issues and testing procedures, on labelling and/or on some other approach or combination of these;

- What types of appliances, equipment or products may be most amenable to international agreement.

30. The AGBM may also wish to consider whether there are any means of increasing the exploitation of the energy-efficiency potential in existing buildings (for example, information sharing, best practice codes, innovative financing mechanisms) that could be appropriately advanced through international agreement.

31. Similarly, the AGBM could also examine means to facilitate information sharing on the construction of new energy-efficient buildings, including standards, as well as cooperative actions related to the research, development and demonstration of new energy-efficient building technologies.

D. Transportation

32. The transportation sector accounts for approximately one quarter of CO_2 emissions from Annex I Parties. For some of these Parties, the figure approaches one half of the emissions. Moreover, several Annex I Parties indicate that transportation is now one of the most rapidly growing sources of emissions. The IPCC indicates that greenhouse gas emissions from transportation have increased more rapidly on a global scale than such emissions from any other energy-using sector over the past 20 years (WGII, Summary, p. 12).

33. Annex I Parties have reported on a wide range of policies and measures that are being implemented in this sector in response to a variety of policy objectives. The most commonly-mentioned measures include fuel taxes, improved traffic management and enhanced support for public transportation. Action to improve the fuel economy of new vehicles or to develop and promote the use of alternative transportation fuels is less frequently reported.

34. IPCC Working Group II concludes that:

> "Projected energy use in 2025 could be reduced by about a third . . . through vehicles using very efficient drive-trains, light weight construction and low air resistance design, without compromising comfort and performance. Further energy use reductions are possible through the use of smaller vehicles, altered land use patterns, transport systems, mobility patterns, and lifestyles; and shifting to less energy-intensive transport modes. Greenhouse gas emissions per unit of energy could be reduced through the use of alternative fuels and electricity from renewable sources. These measures, taken together, provide the opportunity for reducing global transport emissions by as much as 40 per cent of projected emissions by 2025" (WGII, Summary, p. 14)

35. Transportation sector emissions are relevant for all Annex I Parties. The fact that emissions are expected to continue to grow rapidly in this sector, coupled with the scope for further action in many Annex I Parties, would seem to make greenhouse gas emissions from transportation a key focus for action under the Berlin Mandate. Submissions by Parties to the secretariat reflect this view.

36. IPCC Working Group II concludes that "... there is an emerging consensus that attempts to move traffic to less energy-intensive modes depend on using well-integrated strategies designed specifically for local situations ..." (WGII, Report, p. 21-2). Reducing

transportation subsidies that increase greenhouse gas emissions is also identified by the IPCC as an area where Governments could consider taking action (WGII, Summary, p. 18).

37. Several Parties indicate that approaches to reducing greenhouse gas emissions from new vehicles should be considered by the AGBM; the IPCC also notes the relevance of this area. Some form of international cooperation may be important. In this context, the AGBM may wish to explore the role of internationally-agreed standards, coordinated national standards (that take into account different starting points), voluntary agreements with vehicle manufacturers (international or national), agreement on policy objectives or aims, and/or agreement on cooperative research and development efforts. Economic instruments (for example, vehicle and/or fuel taxes) could also be used to address vehicle emissions (see section III below).

38. A broader mix of policies and measures will be necessary to limit transportation emissions, many of which can be undertaken largely at the national level. In some cases, such national action could be enhanced by international agreement to promote or advance various aspects of sustainable transportation policy (for example, with regard to public transportation, freight transportation, subsidy removal, taxes and pricing, and planning).

39. In addition, a number of Parties identify policies and measures to limit emissions from international aviation and marine bunkers as meriting attention. Such emissions account for approximately 2 to 3 per cent of CO_2 emissions for Annex I Parties, and projections indicate they are increasing. The AGBM may decide how it wishes to address this matter, recalling the roles and mandates of the subsidiary bodies and other international organizations, and the fact that such emissions are not accounted for in national greenhouse gas emission inventory totals.

E. Industrial processes

40. Industrial processes account for a small amount of CO_2 emissions from Annex I Parties but important proportions of other greenhouse gases such as N_2O, PFCs and SF_6 (for example, from production of adipic and nitric acid, nitrogen fertilizer and aluminium). However, only a limited number of Annex I Parties report having implemented policies and measures to address these emissions, albeit with some noteworthy reductions achieved. The IPCC notes that "industrial emissions of nitrous oxide and halogenated compounds tend to be concentrated in a few key sectors and tend to be easier to control. Measures to limit such emissions may be attractive for some countries" (WGIII, Summary, pp. 18-19). A number of Parties also point in their submissions and statements to the desirability of actions in this sector.

41. The AGBM may wish to assess how further action in this sector could be advanced. For example, would there be a role for national and/or international voluntary agreements with agreed sectors and, if so, what should they address? The possibilities offered by

information sharing or best practice guidelines, especially for sectors with many producers, could also be explored.

42. Emissions of HFCs may require special attention in view of the linkages to the Montreal Protocol on Substances that Deplete the Ozone Layer. Should a regulatory approach be employed (as with the Montreal Protocol) or are other approaches available?

F. Agriculture

43. The agriculture sector accounts for about one third of methane emissions and about 40 per cent of nitrous oxide emissions in Annex I Parties. For both gases, agriculture is the single largest source of these emissions in Annex I Parties as a whole. However, the national communications of Annex I Parties reveal only limited efforts to address emissions from agriculture. While a wide range of measures and instruments are being implemented to promote several policy objectives, relatively few Annex I Parties are actually undertaking any specific measure.

44. IPCC Working Group II identifies significant potential for reducing greenhouse gas emissions from agriculture on a global basis (WGII, Report, p. 23-2). Some of the key actions it singles out to reduce methane emissions from agriculture include improved nutrition of ruminant animals, altered treatment and management of animal wastes, better management of rice paddy fields and, in the case of CO_2, reduced biomass burning. Working Group II considers that the key to reducing nitrous oxide emissions from agriculture is improved agricultural management (for example, with regard to fertilizer use and tillage practices). It also points to the potential for increasing carbon sequestration in agricultural soils.

45. Given the prominence of this sector's contribution to methane and nitrous oxide emissions, the AGBM may wish to consider how action in this sector could be advanced. In particular, it may wish to explore what mechanisms would be most appropriate for a sector characterized by a large number of actors and unique management frameworks within each Party.

46. How could examples of "best practice" be shared among Parties? Could Parties reach agreement on "guidelines" for best practices that would allow for flexibility in national-level implementation, possibly in the context of agreed policy objectives (for example, regarding use of fertilizers, nutrition of ruminant animals, treatment of animal wastes, and/or tillage practices)? Is there any scope for cooperative research efforts to reduce greenhouse gas emissions from this sector?

G. Land use change and forestry

47. Figures reported in the national communications indicate that removals of CO_2 through land use change and forestry practices could be equivalent to approximately

10 per cent of CO_2 emissions in Annex I Parties. In a limited number of Parties, however, these removals could be equivalent to more than a third of national CO_2 emissions.

48. Document FCCC/AGBM/1995/6 makes it clear that many Annex I Parties are taking steps to promote afforestation of agricultural lands, abandoned lands and urban areas. In most cases, Parties are using financial incentives to pursue this objective, although some Parties are using other policy instruments as well. Fewer Parties are taking actions to improve the management of existing forests - although financial incentives are once again the primary tool being used to meet this end.

49. IPCC Working Group II indicates that there are substantial opportunities to increase the carbon sequestered in forests over the next 50 to 100 years on a global scale, although nearly all this potential is found outside Annex I Parties (WGII, Report, 24-2).

50. Few Parties mention policies and measures in this sector in their submissions to the secretariat, although improving the management of existing forests is noted. The IPCC suggests that policymakers could consider "implementing measures to enhance sinks or reservoirs of greenhouse gases such as improving forest management and land use practices" (WGIII, Summary, p. 4).

51. The AGBM may wish to consider actions to enhance sinks and/or reduce emissions in this sector, bearing in mind the work of the Intergovernmental Panel on Forests. Is agreement on shared policy objectives with respect to forest management possible? Could common goals be defined with respect to afforestation? Could Parties reach agreement on "guidelines" for best practices that would allow for flexibility in national-level implementation? Is there any scope for cooperative research efforts to reduce greenhouse gas emissions from this sector?

H. Waste management and sewage treatment

52. The waste management and sewage treatment sector accounts for approximately one quarter of CH_4 emissions in Annex I Parties. These Parties report a limited range of action in this sector. Efforts are directed primarily at promoting recycling, minimizing waste and capturing methane emissions from landfills, with less attention given to reducing emissions from sewage treatment.

53. IPCC Working Group II notes that "recent studies suggest that global methane emissions from solid-waste disposal can be reduced by about 30 per cent through the widespread use of existing technologies and practices, making both economic and environmental sense ..." (WGII, Report, p. 22-20).

54. The AGBM may wish to consider how best to address this sector. The relatively limited range of actions reported by Annex I Parties indicates that there may still be some scope for national action. How could this potentially be promoted (for example, through

agreement on policy objectives, on "best practices", on instruments such as taxes or regulations)? The AGBM may also wish to consider whether reducing methane emissions from landfills might lend itself to agreement on more precise measures or policy objectives regarding recovery practices, technology applications in particular circumstances or recycling and waste reduction.

III. CROSS-SECTORAL ECONOMIC INSTRUMENTS

55. According to document FCCC/AGBM/1995/6, a limited number of Annex I Parties report using energy, carbon or other broad-based taxes to reduce greenhouse gas emissions or taking steps to remove subsidies that lead to higher emissions, including for consumers and producers of fossil fuels. Several Parties point to the trade and competitiveness issues associated with such instruments. These instruments are also identified as instruments requiring some degree of international coordination and as priorities for analysis and assessment. In this context, Article 4.2(e), subparagraphs (i) and (ii) are relevant.

56. The IPCC discusses cross-sectoral economic instruments at some length. Working Group III notes that "at both the international and national levels, the economic literature indicates that instruments that provide economic incentives, such as taxes and tradeable quotas/permits, are likely to be more cost-effective than other approaches" (WGIII, Summary, p. 26). In a similar vein, Working Group II concludes that Governments should consider "energy pricing strategies (e.g., carbon or energy taxes, and reduced energy subsidies)" (WGII, Summary, p. 18). Working Group III also concludes that "a number of studies of this issue indicate that global emissions reductions of 4 to 18 per cent, together with increases in real incomes, are possible from phasing out fuel subsidies" (WGIII, Summary, p. 26).

57. In this light, the AGBM may wish to discuss how best to advance in its consideration of cross-sectoral economic instruments. A number of orientations may be worthy of consideration, for example:

- Common international, or coordinated national, efforts on new taxation measures and/or on removal of subsidies and market distortions

- Agreement to promote national efforts to review existing taxes and subsidies and consider possibilities to restructure these so as to reduce greenhouse gas emissions

- Agreement on some principles or a common set of market signals that Annex I Parties could implement through national actions appropriate to each Party

While further analysis and assessment would be necessary, this would most usefully be carried out if some guidance were available on the nature of the policy measures to be assessed.

58. A number of Parties have mentioned tradeable emission permits or quotas as a measure to be considered by the AGBM. While it might be possible for some preliminary conclusions on such an approach to be reached by COP 3, it would appear unlikely that a fully-developed system could be agreed by that deadline.

Annex

SECTORAL "POLICY OBJECTIVES" AS SET OUT IN DOCUMENT FCCC/AGBM/1995/6

1. ENERGY AND TRANSFORMATION INDUSTRIES

   (a) Restructuring energy markets

   (b) Existing facilities: improving energy efficiency and reducing fugitive emissions

   (c) Increasing the use of non-fossil fuel energy sources and low-carbon fossil fuels

   (d) Energy transmission and distribution

2. INDUSTRY

3. RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL

   (a) Improving the energy efficiency of new buildings

   (b) Improving the energy efficiency of existing buildings

   (c) Improving the energy efficiency of appliances and equipment

4. TRANSPORTATION

   (a) Improving automobile fuel efficiency

   (b) Increasing the use of alternative transportation fuels

   (c) Strengthening vehicle emission controls

   (d) Increasing the use of alternative modes of transportation

   (e) Increasing the efficiency of freight transportation

   (f) Improving transportation and urban land use planning

5. INDUSTRIAL PROCESSES

6. AGRICULTURE

   (a) Reducing emissions from enteric fermentation in animals

   (b) Reducing emissions from animal wastes in agriculture

   (c) Reducing emissions from the use of nitrogen fertilizers

   (d) Enhancing carbon dioxide sequestration and retention in agricultural soils

   (e) Reducing methane emissions from rice production

7. LAND USE CHANGE AND FORESTRY

   (a) Preserving biomass

   (b) Afforestation and reforestation

8. WASTE MANAGEMENT AND SEWAGE TREATMENT

   (a) Promoting recycling and minimizing waste

   (b) Reducing emissions from sewage treatment

   (c) Reducing methane emissions from landfills

9. CROSS-SECTORAL ECONOMIC INSTRUMENTS

UNITED NATIONS

Framework Convention on Climate Change

Distr.
GENERAL

FCCC/AGBM/1996/3
1 February 1996

ENGLISH ONLY

AD HOC GROUP ON THE BERLIN MANDATE
Third session
Geneva, 5-8 March 1996
Items 4 and 5 of the provisional agenda

STRENGTHENING THE COMMITMENTS IN ARTICLE 4.2(A) AND (B)

CONTINUING TO ADVANCE THE IMPLEMENTATION OF EXISTING COMMITMENTS IN ARTICLE 4.1

Annotated compilation of information relevant to the Berlin Mandate process

Note by the secretariat

CONTENTS

		Paragraphs	Page
I.	INTRODUCTION	1	2
II.	SCOPE OF THE NOTE AND ACTION BY THE AD HOC GROUP ON THE BERLIN MANDATE . .	2 - 4	2
	Annex		
	Compilation of relevant literature		3
	A.I. Reports by specialized agencies and other bodies in the United Nations system	1 - 30	3
	A.II. Reports by other intergovernmental organizations . .	31 - 77	12
	Appendix		
	Additional reports by international organizations		25

I. INTRODUCTION

1. At its first session, the Ad Hoc Group on the Berlin Mandate (AGBM) pointed to the wide array of currently available information relevant to the Berlin Mandate process and to the analysis and assessment in particular. The entities responsible for such information were invited to make this information available to the AGBM to assist in the process (FCCC/AGBM/1995/2, para. 19 (g) and (h)). The AGBM requested the secretariat to prepare for the second session an annotated compilation of information relevant to the Berlin Mandate process; this was issued as document FCCC/AGBM/1995/5. The present document is a continuation of the earlier annotated compilation and should be read in conjunction with both that compilation and document A/AC.237/83 (prepared for the eleventh session of the Intergovernmental Negotiating Committee).

II. SCOPE OF THE NOTE AND ACTION BY THE AD HOC GROUP ON THE BERLIN MANDATE

2. The annotations consist of descriptions of the contents of compiled documents: they are not intended to summarize the information provided in the document but to give an indication of the issues addressed. In some cases, the annotations were provided by the submitting organization; in others, they were prepared by the secretariat. In no case should they be interpreted as representing the views of the secretariat.

3. The compilations should not be seen as an exhaustive listing of relevant documents but as an initial attempt to assist the AGBM in identifying and considering the wide range of information relevant to the Berlin Mandate process that is currently available.

4. The AGBM is invited to make use of the compilations at its third session as background information to the discussion under items 4 and 5 of the provisional agenda.

Annex

COMPILATION OF RELEVANT LITERATURE

A.I. REPORTS BY SPECIALIZED AGENCIES AND OTHER BODIES IN THE UNITED NATIONS SYSTEM

A. Global Environment Facility (GEF)

Jan Fuglestvedt, Ted Hanisch, Ivar Isaksen, Rolf Selrod and Asbjorn Torvanger, **A review of country case studies on climate change**, 1994. GEF Working Paper No. 7, Report No. 12752.

1. This paper is the fourth of a series of GEF working papers dealing with the Program for Measuring Incremental Costs for the Environment (PRINCE). It provides an overview of the status of country studies on climate change and covers methodological issues, field tests, and dissemination related to the technical issues of measuring incremental cost. The paper also looks at the extent to which the studies are meeting, or plan to meet, the obligations of the Parties under the UNFCCC. Areas covered include inventories of sources and sinks of greenhouse gases, impacts and vulnerability assessments, response strategies and their cost-effectiveness, the implications of country projects that have transnational benefits, and the usefulness of country studies for government policy makers.

B. International Civil Aviation Organization (ICAO)

Civil aviation and the environment, ICAO Assembly Working Paper A31-WP/39, 1995.

2. This report from the ICAO Council to the thirty-first session of the ICAO Assembly discusses the progress being made by the Committee on Aviation Environmental Protection (CAEP) and its subsidiary bodies with regard to aircraft engine emissions. The paper also draws attention to the decision of the Conference of the Parties regarding allocation and control of international aviation emissions and refers to the need for ICAO to contribute where appropriate to the UNFCCC process, while seeking to ensure that insofar as the control of emissions is concerned, the UNFCCC process does not duplicate the work of CAEP.

Report of the Executive Committee, Thirty-first Session of the Assembly, September/October 1995.

3. This report discusses the need for the ICAO to maintain its leadership role with regard to environmental issues and requests the ICAO Council to consider various proposals put forward on environmental charges and taxes and to examine all aspects of the relationship of the ICAO with other United Nations policy-making bodies in the environmental field that have expressed an interest in civil aviation, notably the UNFCCC.

Policies on taxation in the field of international air transport, ICAO Doc. 8632-C/968, second edition, January 1994.

4. This document reviews the policies of ICAO member States aimed at ensuring that various forms of taxation, including taxes on the sale and use of air transport, do not become major obstacles to the further development of international air transport. Non-observance of the principle of reciprocal exemption envisaged in these policies was also seen as risking retaliatory action with adverse repercussions on international air transport. Section IV includes a resolution calling on States to reduce or eliminate such taxes levied to raise revenue for general or specific public (that is, non-aviation) purposes.

Statements by the Council to Contracting States on charges for airports and air navigation services, Doc. 9082/4, fourth edition, 1992.

5. This document contains recommendations and conclusions of the ICAO Council with regard to charges and is intended for the guidance of States. The document addresses noise-related charges; no specific guidance is given regarding emissions-related charges. The Council expresses concern over the proliferation of charges on air traffic and recommends that States impose charges only for services and functions which are required for international civil aviation and should refrain from imposing charges which discriminate against international civil aviation in relation to other modes of international transport.

Background information in connection with an environmental tax/charge on air transport, paper presented by the ICAO secretariat to the Commission on Sustainable Development, Working Group on Finance, March 1995.

6. This paper provides background information in connection with a suggested tax or environmental user charge on air transport. It considers some of the issues raised by such a tax or charge and provides information on the policies that States have adopted within ICAO regarding taxation and international air transport; the distinction between "taxes" and "charges"; policy questions that would need to be addressed; and practical problems that would need to be overcome.

ICAO engine exhaust emissions data bank, Doc. 9646-AN/943, ICAO, Montreal, 1995.

7. This data bank compares the gaseous emissions from different aircraft engines, and notably those emissions for which ICAO established Standards such as smoke, unburnt hydrocarbons, carbon monoxide, and oxides of nitrogen. One of the limitations of the data bank is that, like the ICAO Standards, it is based on the landing and take-off cycle and only considers emissions below 915m (3000 ft). It may not therefore be a good guide for comparing the emissions of different engines in other flight modes.

C. International Maritime Organization (IMO)

Prevention of air pollution from ships. Resolution A.719(17), adopted on 6 November 1991 (agenda item 10).

8. This resolution requests, *inter alia,* the Marine Environment Protection Committee to collect and assess available information on machinery exhaust and cargo emissions in order to establish a reference level for air pollution levels from ships and develop an implementation plan to reduce the shipboard use and consumption of ozone-depleting chlorofluorocarbons (CFCs). Furthermore, the resolution urges Governments to prohibit the use of CFCs in fixed refrigeration and air conditioning plants and the use of halons in fire-extinguishing systems on board newly built ships.

Draft protocol of 1997 to the protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973. Marine Environment Protection Committee (MEPC), 20 October 1995, MEPC 38/9.

9. Annex VI of the new draft protocol outlines 19 new regulations aimed at preventing air pollution from ships. In chapter II, "Survey, certification and means of control", the draft protocol envisages surveys and inspection of ships (regulation 5), the issue of international air pollution prevention certificates (regulation 6), and duration and validity of such certificates (regulation 9). Deliberate emissions or new installations of equipment using halons, CFCs, nitrogen oxides, sulphur oxides, and volatile organic compounds are prohibited in a number of regulations.

D. United Nations Conference on Trade and Development (UNCTAD)

Newly emerging environmental policies with a possible trade impact: a preliminary discussion (TD/B/WG.6/9), 1995.

10. The report seeks to identify emerging enviromental policy instruments and provides a conceptual analysis of the possible trade effects of such instruments. Emerging product-specific environmental policy instruments are discussed, including policies touching on energy, climate change, ozone depletion, and forestry. The report highlights some of the uncertainties surrounding the implementation of newly emerging environmental policies, with developing countries taking a "wait and see" stance on whether the industrial sector in developed countries will adopt these policies and whether these policies may restrict or promote their exports. The instruments or environmental policies that are most likely to affect trade are "process and production methods" and "life-cycle approaches".

Environment, international competitiveness and development: lessons from empirical studies (TD/B/WG.6/10), 1995.

11. This report analyses the linkages between environmental policies and competitiveness and presents empirical research showing that the competitiveness effects of such policies have not been significant in developed countries. However, developing countries are concerned that the competitiveness effects of environmental standards are emerging in sectors where comparative advantage is shifting from developed to developing nations and could become significant in sectors such as textiles, footwear, electronics, and furniture.

12. Multilateral environmental agreements have made important contributions to improving environmental management and have affected trade and competitiveness. However, they need to be considered against the less positive aspects that such agreements may have. Moreover, the trade and competitiveness effects of these agreements may be higher for developing countries than developed countries in relative, but also in absolute, terms.

E. World Bank

Kulsum Ahmed, **Renewable energy technologies: a review of the status and costs of selected technologies**. Report No. WTP 240, 1994.

13. This paper examines evidence on the historical and projected costs of selected renewable energy technologies and assesses developments. It reviews estimates from more than 50 studies and expresses the costs on a common basis for photovoltaics, solar-thermal technologies, and biomass for liquid fuels and electricity production.

14. The findings presented in this paper show that: (1) there has been a decline in the cost of ethanol production since the 1970s, attributable to technology improvements and a shift towards cheaper crops; (2) the costs of electricity from biomass are site-specific and vary with raw material costs but still compare well with the costs of fossil-fired generation and even hydro generation in favourable situations; (3) costs of electricity from solar-thermal technologies show much variability; and (4) costs of photovoltaic modules have decreased by a factor of 50 since the early 1970s and the possibilities for further cost reduction are far from being exhausted.

Denis Anderson, **Cost effectiveness in addressing the "CO_2 problem", with special reference to the investments of the Global Environment Facility.** Environment Department Working Paper, Climate Series No. 005.

15. This paper describes the investment criteria and ground rules used by the Global Environment Facility (GEF) to provide financial support and develop practices, technologies, and policies that could appreciably restrict carbon accumulations. The problems linked to

identifying cost-effective investments, costs, and portfolio choice are discussed, as well as the advantages or otherwise of supporting projects that are aimed at energy efficiency, backstop technologies, and type I and type II projects. Some of the ground rules as to what comprises a satisfactory portfolio of projects that meet the criterion of cost-effectiveness are discussed. The paper identifies five types of cost-effective investment projects:

- *Placing a cost (or a shadow price) on carbon emissions.* This cost should be the marginal cost of turning to the backstop technologies. At the present time, the most promising of these technologies are those using renewable energy, principally solar and biomass;

- *Innovations and costs in the backstop technologies.* The GEF can help to reduce costs further by expanding applications as small investments in such projects result in innovation and reduced total costs in the long term;

- *Type I and type II projects.* The GEF will need to give priority to the development of type II projects if developing countries and the international community are to be well placed to respond to the global warming problem if circumstances warrant it;

- *Demonstration projects and transaction costs.* Notwithstanding the transaction costs and uncertainties linked to type II projects, demonstration projects are considered to be important and should be introduced under certain conditions, notably in countries whose institutional arrangements and energy pricing policies are well suited to the success of GEF projects;

- *Continuity of GEF operations.* Costs can be expected to decline only if there is a long-term commitment to develop the markets and applications of the more promising technologies. Future GEF projects will therefore support the principle of replicability by financing follow-up projects.

Robin W. Bates and Edwin A. Moore, **Commercial energy efficiency and the environment**. Report No. WPS 0972, 1992.

16. This report argues in favour of greater energy efficiency in developing countries and countries with economies in transition as a means of mitigating the harm to the environment arising from growing energy consumption. Developed countries have an indispensable role to play in improving energy efficiency in developing countries, and the report suggests that the introduction of market mechanisms could help to meet such objectives, including:

- More domestic and external competition

- The gradual elimination of energy pricing distortions

- The reduction of macroeconomic and sectoral distortions

- Reducing state interference and giving a greater role to the private sector in energy supply enterprises

- Consumer incentives to select more efficient lighting, and space heating

Robert T. Deacon, **Controlling tropical deforestation: an analysis of alternative policies**. Report No. WPS 1029, 1992.

17. This report discusses some of the difficulties of finding and adopting simple and direct solutions to deforestation and other environmental problems in developing countries. While recognizing the importance of property rights in correcting certain inefficiencies, the report stresses that the sheer size of tropical forests, the communal nature of their service flows, and the pervasiveness of individual access to them makes monitoring and enforcement very costly in some situations and virtually unimaginable in others.

18. A model is presented as providing a systematic way of thinking about the environmental and welfare effects of government policy, for example, by considering patterns of substitution among inputs and outputs in cases where an environmental resource is exploited under conditions of free access. The report argues that detailed knowledge of patterns of substitution and complementarity among ordinary inputs and environmental resources, and information on the use of various environmental resources in the production of specific goods and services, are important and allow policy makers to pursue policy goals in situations where first-best instruments are unavailable.

Willem Floor and Robert van der Plas, **CO_2 emissions by the residential sector: environmental implications of inter-fuel substitution**. Report No. WPS 0978, 1992.

19. This paper examines the efforts of Governments, non-governmental organizations and staff of international development agencies to link deforestation with biomass fuel use. Based on the evidence of CO_2 emissions from household stoves - the major end-use for biomass fuels - and taking into account the complete CO_2 cycle for all the fuels used, the paper finds that the incremental net volume use of CO_2 will usually be higher if hydrocarbon fuels are substituted for biomass fuels. It proposes a household energy strategy in sub-Saharan countries consisting of management of wood-fuels supply, inter-fuel substitution, energy demand management, fuel pricing policies, and appropriate institutional arrangements.

Arnulf Grubler and Nebojsa Nakicenovic, **International burden sharing in greenhouse gas reduction**. Report No. ENV 0055, 1992.

20. This report provides an overview of current and historical greenhouse gas (GHG) emissions; it examines alternative formulations on how emission reduction efforts could be shared among regions/countries and evaluates quantitatively the implications of alternative

GHG allocation/reduction criteria, particularly from the "North/South" perspective. Finally, it describes a combined GHG emission database and software tool developed for the analysis of GHG allocation regimes: the "parametric framework".

21. The main conclusions and findings of the report are as follows: (1) the definition of two generic classes of allocation criteria: *distributive* - the allocation of emission rights - and *reductive* - the allocation of emission *reduction* requirements; (2) differences between each of the two classes were smaller; (3) the basic principle of the allocation was more important than the inclusion of different GHGs; (4) the smallest variations in emission distribution resulted from altering the reference year against which the achievement of emission reduction should be measured.

David O. Hall, **Biomass**. Report No. WPS 0968, 1992.

22. This report discusses the enormous untapped potential for biomass and bioenergy systems which may be less irreversibly damaging to the environment than conventional fuels. However, the economic, social and technological barriers to long-term planning and development of biomass energy systems makes implementation more difficult than for other more centralized energy resources. The report favours the use of both traditional and modernized biomass systems to produce preferred forms such as heat, electricity, and liquids. A series of case studies are presented showing that local involvement and control of biomass energy programmes and projects is a prerequisite for the success of such programmes.

John Homer, **Natural gas in developing countries: evaluating the benefits to the environment**. Report No. WDP 190, 1993.

23. This report argues that there are significant opportunities for sustainable economic growth to be gained from exploiting the reserves of natural gas in developing countries and presents three factors that would favour such a development: (1) the existence of substantial reserves of gas in most developing countries; (2) the availability of large-scale, highly efficient gas-fired power generation technology in the electricity industry in those countries; and (3) the fact that natural gas emits less carbon dioxide than coal or oil and therefore contributes less to global warming. The report goes on to describe how three countries, the Republic of Korea, Poland, and the United Kingdom have dealt with severe air pollution. Lastly, it evaluates the benefits of the use of natural gas in quantitative as opposed to qualitative terms.

Bjorn Larsen and Anwar Shah, **Global tradeable carbon permits, participation incentives, and transfers**. Report No. WPS 1315, 1994.

24. This report evaluates alternative tradeable permit allocations in a global permit regime for the stabilization of world carbon CO_2 at 1987 levels by the year 2000. Allocation by population or GDP, or a combination of the two, is likely to be unacceptable to most middle income countries, as well as to the countries with economies in transition, because they argue that current GHG concentration levels are primarily due to historical emissions from OECD countries and the former Soviet Union and those countries should bear the cost of the abatement policies envisaged.

25. The report proposes an alternative allocation scheme under which non-OECD countries would be allocated permits equal to their projected emissions, and OECD countries would be allocated permits equal to the world emissions target minus the permit allocations to the non-OECD countries. Under this permit allocation, non-OECD countries would benefit from participation, and the net costs to the OECD countries would be only half the costs of unilateral OECD reductions. The cost savings would be even greater if marginal costs of reductions in the non-OECD countries were lower than in the OECD countries.

Bjorn Larsen and Anwar Shah, **Carbon taxes, the greenhouse effect, and developing countries**. Report No. WPS 0957, 1992.

26. This report considers the case for carbon taxes in terms of national interests and concludes that: (1) a global carbon tax involves issues of international resource transfers and would be difficult to administer and enforce; (2) national carbon taxes can raise significant revenues cost effectively in developing nations and are not likely to be regressive as commonly perceived; (3) a carbon tax can significantly reduce local pollution and CO_2 emissions; (4) a carbon tax of US$10 a ton leads to very little output loss for the Pakistani industries analysed in this paper, and any such loss is offset by the health benefits from reduced emissions of local pollutants; and (5) tradeable permits are preferable to a carbon tax when the critical threshold of the stock of carbon emissions beyond which temperatures would rise exponentially is known. However, a carbon tax appears to be a better and more flexible instrument for avoiding large unexpected costs given the current ignorance about the costs of reducing carbon emissions and the threshold effect.

Bjorn Larsen and Anwar Shah, **World fossil fuel subsidies and global carbon emissions**. Report No. WPS 1002, 1992.

27. This report presents evidence on the level of fossil fuel subsidies which are currently evaluated at more than US$230 billion, or 20 to 25 per cent of the value of world fossil fuel consumption at world prices. Removing such subsidies would substantially reduce national CO_2 emissions in some countries and cut back global CO_2 emissions by 9 per cent, on the assumption that prices would not change, and by 5 per cent, if changes in world prices were taken into account. Welfare gains from subsidy removal worldwide would be more than

US$30 billion assuming no change in world prices, or 15 per cent of total subsidies, even if the benefits from the curtailment of greenhouse gases and abatement of local pollution were not taken into account. However, the report concludes that neither subsidy removal nor an equivalent carbon tax would be sufficient to stabilize global carbon emissions at 1990 levels.

Bjorn Larsen, **World fossil fuel subsidies and global carbon emissions in a model with interfuel substitution**. Report No. WPS 1256, 1994.

28. This study presents a simple empirical framework for estimating the level of world fossil fuel subsidies and analysing their implications for CO_2 emissions. It builds on previous work by Larsen and Shah (1992) by providing a more detailed sectoral data set that includes energy prices and consumption for an expanded sample of countries. The study concludes that substantial fossil fuel subsidies prevail in a handful of large carbon-emitting countries and that the fiscal implications of these subsidies are significant in some countries. The author estimates that removing such subsidies would reduce CO_2 emissions by 20 per cent in some of the countries relative to baseline emissions and reduce global CO_2 emissions by 7 per cent.

World Bank, **Energy efficiency and conservation in the developing world. The World Bank's role**. Report No. 11987, 1993.

29. A comparison of the performance of developing and developed countries in energy efficiency has highlighted four critical factors that directly correlate with differences in the efficiency of energy production and end-use. These factors relate to: (1) differences in energy pricing policies; (2) mecanisms for controlling and regulating energy-supplying enterprises; (3) the extent to which energy-using industries are protected from competition; (4) other legal, institutional, and information barriers to the efficient functioning of markets.

30. The following four-point programme is aimed at taking advantage of the increased receptivity of many developing countries to efficiency issues: (1) better integration of energy efficiency issues into country policy dialogues so that they can be addressed at an earlier stage; (2) greater selectivity in lending to energy-supplying enterprises; (3) higher level in-country visibility to be given to demand-side management and end-use intermediation issues; and (4) greater attention to be paid to the transfer of more energy-efficient and pollution-reducing technologies in sector and project work.

A.II. REPORTS BY OTHER INTERGOVERNMENTAL ORGANIZATIONS

A. European Conference of Ministers of Transport

Urban travel and sustainable development. The European Conference of Ministers of Transport (ECMT), 1995.

31. This report identifies current land use and transport policies in OECD/ECMT countries as leading to excessive travel by car in cities and surrounding areas which in turn results in congestion, air pollution, noise, acid rain, and the risk of global warming. The three main strands of the integrated policy approach recommended in the study with a view to reducing car travel, especially in cities, involve:

- *Best practice* - raising the effectiveness of current land-use planning and traffic management to the level of those in the best managed cities

- *Innovations* - bringing demand for car travel into balance with road capacity by shaping new policies to ensure that urban developments assume less car-dependent forms and to apply congestion pricing to traffic management

- *Sustainable development* - promoting more economical vehicles, shorter and fewer car trips, a shift away from solo driving, and greater use of more environmentally-friendly modes of travel by means of repeated annual increases in motor fuel taxation

Transport and the greenhouse effect: interim report on country plans (CEMT/CM(94)3), 1994.

32. In the light of findings that transport emissions per capita in the OECD countries were very high compared with the rest of the world, and continued to grow, as opposed to emissions from non-transport sectors, which have decreased since the 1980s, the Council of Ministers requested further information from member countries on the breakdown of CO_2 emissions in 1990, the measures being taken to limit growth in emissions, and forecasts for the year 2000 for a reference case and for a "measures" case.

33. Figures for the 1990 emissions were for the most part known, but projections for 2000 were not always available. However, forecasts show that there would be a continuous progression of emissions. The measures proposed to limit the growth in emissions fell into three separate categories: (1) measures with uncertain results such as the promotion of modes with low CO_2 emissions; (2) measures with promising results which, at present, only exist as studies, projects or intentions; and (3) effective measures aimed at CO_2 reduction, towards which initial steps have been taken and firm commitments made.

34. A comparison of the measures already implemented with road traffic predictions shows that transport emissions will not be stabilized in most countries, and that, with the exception of increases in fuel taxation in several countries, other recommendations aimed at reducing transport's contribution to global warming have not resulted in concrete measures.

Taking account of transport's external costs (CEMT/CM(94)16), 1994.

35. This document, submitted to the 1994 session of the Council of Ministers, summarizes the work of a joint OECD/ECMT seminar in the autumn of 1993 on the external costs of transport. The seminar found that, *inter alia*, there were positive and negative benefits or "externalities" associated with the transport sector. Estimates of the external effects of accidents, noise, air pollution and congestion are prone to large variations due to different methodologies and assumptions; however, all studies show that road transport generates the greatest share of the costs, which are calculated as a percentage of GDP. In recent years, significant advances have been achieved in valuation methodologies for quantifying externalities.

Task force on social costs of transport: draft terms of reference and work programme (CEMT/CM(95)19), 1995.

36. At their June 1994 meeting, European Ministers of Transport decided to constitute an ad hoc task force on "Internalizing the social costs of transport". The principal objectives of this ad hoc task force, which is expected to conclude its work in June 1997, are, *inter alia*, (1) to define the differences between what is meant by "social" and "external" costs; (2) to provide an overview of available external cost estimates; (3) to give an overview of existing and proposed policies at the national or international level; (4) to report on special problems facing economies in transition, international competitiveness/trade harmonization issues and the impact of individual perceptions on behaviour; and (5) to formulate policy recommendations.

B. International Organization for Standardization (ISO)

Environmental management systems - Specification with guidance for use. Draft International Standard ISO/DIS 14001.

37. This draft International Standard specifies requirements for an environmental management system to enable an organization to formulate a policy and objectives, taking into account legislative requirements and information about significant environmental impacts. It applies to those environmental aspects which the organization can control and over which it can be expected to have an influence.

Environmental management systems - General guidelines on principles, systems and supporting techniques. Draft International Standard ISO/DIS 14004.

38. The general purpose of these guidelines is to provide assistance to organizations implementing or improving an environmental management system (EMS). The guidelines outline the elements of an EMS and provide advice on how to effectively initiate, improve or sustain such a system, as well as on how to allow organizations to address environmental concerns through the allocation of resources, assignment of responsibilities, and ongoing evaluation of practices, procedures, and processes.

C. Organisation for Economic Co-operation and Development (OECD)

Scott Barrett, **Convention on climate change: economic aspects of negociations**, OECD, Paris, 1992. (Also available in French)

39. This volume contains three papers by Dr. Barrett that address different economic aspects of the negotiation process that has led to the United Nations Framework Convention on Climate Change. Although economic efficiency was seen as an important factor influencing the global warming negotiations, other objectives such as social equity and environmental effectiveness were perceived as having important roles to play in determining the eventual policy response.

40. Chapter 1 considers how the choice of a policy instrument might determine which countries would wish to join an international agreement. Chapter 2 examines how the number of participating countries could be increased by using so-called "side payments" without sacrificing overall economic efficiency objectives. Lastly, chapter 3 analyses how to deter "free riding" in an international agreement. All three chapters take a "simulation" approach, coupled with a "games theory" perspective to illustrate their conclusions.

Jean-Marc Burniaux and Joaquim Oliveria-Martins, **Carbon leakages, trade and energy supply: evidence from a simplified maquette**, OECD Department of Economics and Statistics, OECD, Paris, 1994.

41. This paper assesses the reliability of the simulation results of the size of the carbon leakages concerned using the OECD GREEN model. Comparisons between this model and other applied general equilibrium (AGE) models show that there is no general agreement on the size and time pattern for the leakage effects. The paper investigates the underlying causes of these differences by identifying the key parameters and carrying out an extensive sensitivity analysis, using a two-country, four-good "maquette". This maquette reproduces a wide range of alternative assumptions and parameters that would otherwise be difficult to simulate with a large AGE model like GREEN.

Jean-Marc Burniaux, Joaquim Oliveria-Martins and Dominique van der Mensbrugghe. **Carbon abatement, transfers and energy efficiency**, in **The Economics of Sustainable Development**, eds., Ian Golding and L. Alan Winters, Cambridge University Press, 1995.

42. This article explores the impact of direct transfer mechanisms between OECD and non-OECD countries, and uses the GREEN model to simulate and assess the potential scope for curbing CO_2 emissions via such technology transfers. The main conclusions are: (1) that the autonomous energy efficiency improvement parameter plays a key role in determining baseline levels of emissions; (2) implementing a transfer scheme under which OECD carbon tax revenues are recycled towards investment in the non-OECD area is likely to have only a moderate impact on both energy efficiency and emissions; (3) a scenario in which a global carbon tax is combined with a transfer mechanism tied to an energy efficiency mechanism could achieve a sizeable reduction of world emissions without imposing an undue burden on the real income of the non-OECD regions participating in the agreement.

G.F. van den Born, A.F. Bouwman and R. Leemans, **Contribution of agriculture to global change, an analysis of the future role of sustainable land use**, Global Change Department, National Institute of Public Health and Environmental Protection, Bilthoven, Netherlands.

43. This draft paper submitted during an OECD workshop on sustainable agriculture held in February 1992 presents a model indicating that the total contribution of land-use-related emissions of GHG under the "business-as-usual" scenario will not increase significantly, but that the contribution of the different gases will change. Under the "accelerated policies" scenario - a scenario closely related to the concept of sustainable agriculture - there is a significant decrease of about 35 per cent in the total contribution from land use.

44. The authors conclude that sustainable agriculture can play a major role in reducing the emissions of greenhouse gases from land-use-related sources as a result of its emphasis on good land-use planning, management and greater protection of forests, and encouragement of sound animal husbandry practices. Further soil erosion and consequent loss of soil carbon, as well as human-induced soil degradations such as water and wind erosion and chemical and physical deterioration, could be reduced by implementing sustainable agriculture.

William R. Cline, **Global warming: the benefits of emission abatement**, OECD, Paris, 1992. (Also available in French).

45. This report makes two contributions in estimating the benefits of global warming response policies. The first consists of a comprehensive framework which seeks not only to evaluate the direct economic consequences of global warming but also the indirect economic impact (for example price effect) and environmental impacts. The second consists in the provision of rough estimates of values for the most significant cells of the conceptual framework. The preliminary conclusions of this report are that the benefits of responding to

climate change may be of the same order of magnitude as most currently available estimates of the economic costs of policy action, and that greater abatement of greenhouse gas emissions may be justified than was previously accepted in much of the literature.

Jean-Marc Burniaux, John P. Martin and Joaquim Oliveria-Martins, **The effects of existing distortions in energy markets on the costs of policies to reduce CO_2 emissions: evidence from GREEN**, *OECD Economic Studies*, Special Issue on the Economic Costs of Reducing CO_2 Emissions, No. 19, Winter 1992, pp. 141-164.

46. This paper shows that existing distortions resulting from energy taxes and subsidies are important considerations in designing an effective strategy to curb emissions. The existence of energy subsidies in many non-OECD countries has several implications. Firstly, it would entail eliminating subsidies as part of a "no regrets" approach to curbing emissions. Secondly, the economic costs of curbing global emissions are overestimated when the energy subsidies in non-OECD countries are not treated as explicit distortions. Thirdly, an international agreement involving the elimination of existing subsidies before phasing in carbon taxes could be achieved at virtually no cost for the non-OECD countries as a whole so long as carbon reductions are allocated cost-effectively across countries.

Jean-Marc Burniaux, Giuseppe Nicoletti and Joaquim Oliveria-Martins, **GREEN - A global model for quantifying the cost of policies to curb CO_2 emissions**, *OECD Economic Studies*, Special Issue on the Economic Costs of Reducing CO2 Emissions, No. 19, Winter 1992, pp. 50-91.

47. This paper presents the general specifications and structure of GREEN, a multi-regional dynamic general equilibrium model developed by the OECD secretariat. It also describes the database underlying the model and the choice of key parameter values used in calibrating the model to the base year (1985) data set.

Andrew Dean and Peter Hoeller, **Cost of reducing CO_2 emissions: evidence from six global models**, *OECD Economic Studies*, Special Issue on the Economic Costs of Reducing CO_2 Emissions, No. 19, Winter 1992, pp. 16-47.

48. This paper summarizes the results of an exercise in comparing the properties and predictions of GREEN and five other global models that have been developed in major energy and applied economics research centres. The purpose of these comparative model runs was to examine how and why the models differ in baseline CO_2 emission paths and the taxes needed to bring about reductions in emissions and in their associated output losses.

Peter Hoeller and Jonathan Coppel, **Carbon taxes and current energy policies in OECD countries**, *OECD Economic Studies*, Special Issue on the Economic Costs of Reducing CO_2 Emissions, No. 19, Winter 1992, pp. 167-193.

49. This paper reviews the existing and evolving structure of fossil fuel prices and taxes and the relationship between energy prices and emissions in some 20 OECD countries. It also analyses the economic cost of superimposing carbon taxes on current energy taxes and simulating a tax reform system using a simple energy demand system. The authors propose restructuring present energy taxation by the average implicit carbon tax and a carbon *cum* energy tax similar to the European Community proposal.

John P. Martin, Jean-Marc Burniaux, Giuseppe Nicoletti and Joaquim Oliveria-Martins, **The cost of international agreements to reduce CO_2 emissions: evidence from GREEN**, *OECD Economic Studies*, Special Issue on the Economic Costs of Reducing CO_2 Emissions, No. 19, Winter 1992, pp. 93-120.

50. This paper reports the results of several simulations using the GREEN model designed to quantify the economy-wide and global costs of a range of international agreements to curb CO_2 emissions. The paper addresses two questions connected with such agreements, namely, "What are the effects of agreements that are more or less comprehensive in country coverage?", and "How large are the real income gains that could potentially be reaped from a cost-effective agreement relative to uniform percentage cuts in all regions?".

Joaquim Oliveria-Martins, Jean-Marc Burniaux and John P. Martin, **Trade and the effectiveness of unilateral CO_2-abatement policies: evidence from GREEN**, *OECD Economic Studies*, Special Issue on the Economic Costs of Reducing $C0_2$ Emissions, No. 19, Winter 1992, pp. 123-139.

51. This paper analyses the effects of unilateral action by one country/region to curb CO_2 emissions in the absence of a global agreement, and the possibility that this could give rise to "carbon leakages". The simulation results presented suggest that the leakage rate would be small, and further sensitivity analysis shows that the key parameter determining the size of the leakage rate is the price elasticity of coal.

Peter Hoeller, Andrew Dean and Jon Nicolaisen, **Macro-economic implications of reducing greenhouse gas emissions: a survey of empirical studies**, *OECD Economic Studies*, No. 16, Spring 1991, pp. 45-76.

52. This paper examines the key factors shaping baseline emission scenarios and the aggregrate cost of emission reductions, as shown by both global and country-specific models, and also discusses the key determinants of the model outcomes. The paper briefly reviews

other options for reducing greenhouse gas emissions and draws some more general lessons for the policy response to the threat of climate change.

Jon Nicolaisen, Andrew Dean and Peter Hoeller, **Economics and the environment: a survey of issues and policy options,** *OECD Economic Studies*, No. 16, Spring 1991, pp. 8-38.

53. This paper reviews the main causes for excessive use of environmental resources in a market economy and discusses the merits of different policy instruments to counter environmental degradation, as well as surveying the information needed for the successful conduct of environmental policy. The paper also considers policy options to cope with the uncertainties surrounding cost benefit estimates.

Jean-Marc Burniaux, John P. Martin, Giuseppe Nicoletti and Joaquim Oliveria-Martins, **The cost of policies to reduce global emissions of CO_2: initial simulation results with GREEN**, OECD Department of Economics and Statistics, Working Paper No. 103, OECD, Paris, 1991.

54. This report presents the results of scenarios of alternative international agreements to quantify the economy-wide and global costs of policies to curb emissions of CO_2 using GREEN. The three scenarios project: (1) a "Toronto-type" agreement in which countries cut their emissions by 20 per cent below their 1990 levels by the year 2020; (2) a "Toronto-type" agreement with trade in emissions rights; and (3) the introduction of regulations to ensure that carbon emissions are only curbed in industrialized countries. The findings show that:

- Under the first scenario, the level of carbon tax across the six regions considered averages US$215 per ton of carbon, with variations ranging from a low of US$30 per ton in China to a high of $950 in other countries of the Pacific region;

- The second scenario shows that any international agreement that sets uniform targets should include a provision for participating countries to trade emission rights. This scenario would lead to a fall in demand for coal, more drastic CO_2 emission cuts by China, and an increase in oil consumption in OECD countries;

- Under the third scenario, industrialized countries would find themselves burdened with an average tax level of US$2,200 per ton of carbon in 2020. These tax levels would lead to large welfare losses and have implications for household income and energy-exporting LDCs.

Jean-Marc Burniaux, John P. Martin, Giuseppe Nicoletti and Joaquim Oliveria-Martins, **GREEN - A multi-region dynamic general equilibrium model for quantifying the costs of curbing CO_2 emissions: a technical manual**, OECD Department of Economics and Statistics, Working Paper No. 104,OECD, Paris, 1991.

55. The purpose of this paper is to present a full technical description of a multi-regional, multi-sector, dynamic applied general equilibrium (AGE) model, known as the GeneRal Equilibrium ENvironmental model (GREEN), as well as of its database and parametrization as of May 1991.

Andrew Dean and Peter Hoeller, **Cost of reducing CO_2 emissions: evidence from six global models**, OECD Department of Economics and Statistics, Working Paper No. 122, OECD, Paris, 1992.

56. This paper summarizes and analyses the results of the OECD's Model Comparisons Project, which attempts to standardize key inputs and reduction targets across different models so as to acquire a better understanding of the ways in which the various models work and the different results on baseline CO_2 emissions paths, carbon taxes, and economic costs. The major findings of the project are as follows:

- There is a wide range of "business-as-usual" emission paths;
- Carbon taxes and economic costs vary greatly across regions and models;
- Substitution policies between different fossil fuels, between fossil fuels and non-fossil fuels, and between energy and other production factors are shown to be important determinants of the differences in taxes and costs across models;
- The composition of primary energy demand and relative energy prices are also important in determining the amount of substitution that takes place and the taxes necessary to induce fuel switching;
- Emissions trading has the potential to greatly reduce both the global and the regional cost of emissions reductions in view of the wide dispersion of carbon taxes and abatement costs across regions.

Peter Hoeller, Andrew Dean and Masahiro Hayafuji, **New issues, new results: the OECD's second survey of the macroeconomic costs of reducing CO_2 emissions**, OECD Department of Economics and Statistics, Working Paper No. 123, OECD, Paris, 1992.

57. This survey updates estimates of the macroeconomic costs of reducing CO_2 emissions and reviews a variety of policy-related topics that have not been covered in previous surveys. The survey concludes that reference scenarios which project trends in the absence of control policies point to a growth in CO_2 emissions in the range of 1 or 2 per cent per annum in the

long run, with larger increases in the period up to 2025. With emissions continuing to increase in reference scenarios, reductions from current levels imply very large decreases from the levels projected to occur in the long run.

58. Simulations by different models show large differences for the required carbon taxes and for associated welfare losses. Such differences can mainly be explained by variations in assumptions about the degree of substitutability among the various energy sources, the availability of low-cost, low-carbon backstop technologies, capital formation, expected formation, trade flows, and fossil fuel supply.

Giuseppe Nicoletti and Joaquim Oliveria-Martins, **Global effects of the European carbon tax**, OECD Department of Economics and Statistics, Working Paper No. 125, OECD, Paris, 1992.

59. This paper analyses the implications of the European Commission proposal of a mixed energy *cum* carbon tax to curb CO_2 emissions from a global perspective. The effects of this proposal on emissions and welfare in both the European Community (EC) and the rest of the world are considered as regards three aspects: (1) the effectiveness of the proposed tax measures in terms of curbing EC and global CO_2 emissions; (2) the implied cost for the EC and the other countries/regions of the world; (3) the implications of the European Commission's proposal for the world distribution of emissions and the competitiveness of the EC economy.

Graciela Chichilnisky and Geoffrey Heal, **Markets for tradeable CO_2 emission quotas: principles and practice**, OECD Department of Economics and Statistics, Working Paper No. 153, OECD, Paris, 1995.

60. This paper reviews a range of issues related to tradeable CO_2 emission quotas. It considers the economic principles on which they are based, compares them with alternative carbon abatement policies, and reviews the way in which tradeable quotas would be implemented in practice. Section II of the paper explains why these issues are on the agenda and how they relate to current issues such as joint implementation. Section III compares salient aspects of the two policy approaches - tradeable quotas and carbon taxes - and analyses how they can be combined. Section IV considers how tradeable CO_2 emission quotas should be allocated among participating countries.

Harvey Yakovitz, **Developed countries' views concerning environmentally sound technology transfer and information**. Paper presented at a workshop on "The promotion of access to and dissemination of information on environmentally sound technologies" held at Seoul from 30 November to 2 December 1994.

61. This paper reports that by the year 2020 the industrial sector of developing countries is expected to provide 30 per cent of their GDP. With this development in mind, the author

proposes that the key priorities should be capacity building, increasing information flows to those who can implement cleaner production techniques, and leveraging private sector investments to favour cleaner technologies. At present, only a minority of OECD member countries are emphasizing cleaner technologies in their technology cooperation programmes. This proportion will need to increase in order to enhance the chances that developing countries can leapfrog the "end-of-pipe" pollution control phase in the industrial sector.

62. To achieve this, and other objectives, the author recommends that: (1) developed countries promoting cleaner technologies need to interact more closely with the private sector in their own and recipient countries; (2) donor agencies need to consider cleaner technologies as an integral part of their technology cooperation programmes; (3) recipient Governments need to set priorities for implementing cleaner technologies; (4) recipient countries ought to create a demand for cleaner technologies as a major step towards sustainable development.

Environmental taxes in OECD countries, OECD, Paris, 1995.

63. This compendium on environmental taxes in OECD countries is an expanded and updated version of an earlier survey (1993). It discusses and reviews the use of taxation as an instrument of environmental policy in a number of OECD countries. It covers a broad range of taxes that are explicitly recognized as having an environmental purpose (for example, to reduce environmental damage), but also covers a number of areas of the tax system where the structure of existing taxes may be seen as having a significant effect, but the taxes are not specifically targeted on the environment. The survey also covers topics such as the relative importance of ecotax revenues (chapter 2); new policy trends (chapter 3); the taxation of motor fuels and vehicle-related taxes (chapter 4); the taxation of energy sources (chapter 5); and environmental taxation of energy in different European countries (chapter 6).

Promoting cleaner production in developing countries: the role of development co-operation, OECD, Paris, 1995.

64. This publication provides a detailed overview of workshop discussions and the priority action areas involved in the question of how donors can best support cleaner industrial production in developing countries. The main conclusions of the workshop covered six topics: (1) developing country policies; (2) donor policies; (3) capacity development; (4) access to information; (5) the role of the private sector; and (6) finance mechanisms.

Technologies for cleaner production and products: towards technological transformation for sustainable development, OECD, Paris, 1995.

65. This report was prepared by the Pollution Prevention and Control Division of the OECD Environment Directorate as part of a three-year (1990-1993) Technology and Environment Programme. The Programme sought to promote the exchange of information

on cleaner and safer technologies, analyse opportunities for, and impediments to, technology development, develop new insights for achieving environmental policy objectives and, lastly, to develop policy options and instruments for use by Governments in evaluating, supporting and transferring technologies to promote sustainable development.

66. The Programme's accomplishments included heightening awareness of the need for, and capabilities of, cleaner technologies. It provided an insight into technology trajectories, and identified new analytical tools for measuring and evaluating progress as well as barriers. The responsibilities of central governments and their policy options were clarified and a network of experts from government, industry and other private sector institutions was created to support the long-term work of the OECD.

Towards sustainable agricultural production: cleaner technologies, OECD, Paris, 1994.

67. This summary report of an OECD Workshop on Sustainable Agriculture and Technologies and Practices discusses the central notion that environmentally and economically viable alternative agriculture techniques can be, and have been, achieved. Workshop participants recognized the wide diversity of more environmentally sustainable agricultural systems, whether biological/organic or integrated/low-input agriculture, that are already in place or are gradually emerging.

68. The workshop sought to identify pathways and policy frameworks to make agriculture more sustainable and provided an opportunity to focus on technological opportunities. It also examined issues such as integrated systems, erosion control, fertilizers, landscape management, information as an input, barriers to the adoption of more sustainable agriculture technologies and practices and, lastly, significant policy opportunities.

Trade issues in the transfer of clean technologies (OECD/GD(92)93), OECD, Paris, 1992.

69. This report examines a number of cases in which trade in clean technologies is currently taking place in order to establish whether, and to what extent, trade-related policies, such as the protection of intellectual property, actually interfere with the transfer of these technologies. The evidence of the seven case studies presented in the report shows that there are no significant obstacles to trade in clean technology. Exporters and importers considered that other obstacles, such as the lack of access to financing and weak or inadequately-enforced environmental regulations in some countries were more important factors. The report concludes that government policies aimed at encouraging trade in environmentally friendly technologies should address these two areas, and that less attention should be devoted to trade-related policies and practices as obstacles to clean technology transfer.

Export promotion and environmental policies (OECD/GD(94)9), OECD, Paris, 1994.

70. This report is intended to clarify the relationship between government export promotion activities and the export of environmental technologies. Governments are increasingly interested in promoting the export of such technologies because of the trade benefits to be derived by OECD countries and the environmental benefits to be reaped by non-OECD countries. Some OECD Governments are starting to determine the amount of funding, in the form of export credits, that should be devoted to environmental technologies. Moreover, the export of environmental technologies and services is increasingly being supported by government-sponsored export promotion activities.

71. The report identifies a number of policy options that may be examined by Governments with a view to integrating further environmental considerations into their export credit and promotion programmes:

- Improving data and information on environmental technologies benefiting from export promotion
- Targeting export promotion activities to assist producers of environmental technologies
- Promoting more exports of clean technologies as opposed to pollution control technologies
- Conducting reviews of the environmental implications of both export credit and promotion activities
- Ensuring consistency in development assistance and export promotion policies regarding environmental technology transfer

Summary record on OECD workshop on development assistance and technology cooperation for cleaner industrial production in developing countries, held at Hanover, Germany, in September 1994 (OECD/GD(95)92), OECD, Paris, 1995.

72. The major aim of the workshop was to review and discuss how donors could help to promote cleaner industrial production in developing countries. In the opening plenary, experts noted that there had been a progressive strengthening of measures to protect the environment, notably in pollution control and remediation.

73. Practice in pollution prevention rather than pollution control is lagging behind conceptual progress, and there are powerful reasons to strengthen the national capacities of developing nations to manage technological change to achieve sustainable development. With industrial production in developing countries expected to expand rapidly over the next two

decades, the need will be felt for these countries to move beyond pollution control and to integrate economic development and environmental protection if they wish to achieve sustainable development.

Global warming: economic dimensions and policy responses, OECD, Paris, 1995.

74. The purpose of this paper is to inform the process of developing an appropriate policy response to the risk of climate change. The paper begins with a brief introduction to and interpretation of the UNFCCC, followed by a summary of the uncertainties surrounding the issue of climate change and an assessment of the line between geographical coverage of abatement efforts and costs.

75. Possible responses to the risk of global warming are reviewed in part 3. Three main generic classes of response measures are covered - *emissions curtailment* (preventive action), *GHG sequestration* (offsetting action), and *adaption* (adjustment action). The basic problems and possibilities for an efficient overall response, including the role of research and development, are discussed in part 4. Given the crucial role of a carbon tax in both the theoretical discussion as well as the actual policy debate concerning climate change, the fiscal implications of a carbon tax are discussed in some detail in part 5. In recognition of the global scope of the paper and the "public good" aspects of the problem, part 6 of the paper focuses on the need for international cooperation and discusses various key issues pertinent to joint implementation.

The economics of climate change: proceedings of an OECD/IEA International Conference on the Economics of Climate Change held in Paris in June 1993, OECD, Paris, 1994.

76. The specific objectives of this Conference were: (1) to provide a broad overview of the state of the art in the economics of climate change; (2) to provide a sense of where consensus is emerging and where differences of opinion still exist; (3) to suggest ways of reforming the linkage between economic studies and actual climate change response policies; (4) to suggest new directions for OECD and IEA activities related to the economics of climate change.

77. Wide-ranging discussions amongst the 250 experts who attended the Conference focused on such topics as: the economic costs and benefits of emissions mitigation strategies; the potential role of carbon taxes and other economic instruments in the policy mix; possibilities for technical development and diffusion, especially in the energy sector; and opportunities for joint abatement action by industrialized and developing nations.

Appendix

ADDITIONAL REPORTS BY INTERNATIONAL ORGANIZATIONS

A. International Organization for Standardization (ISO)

General guidelines for environmental auditing - General principles. Draft International Standard ISO/DIS 14010.

Guidelines for environmental auditing - Audit procedures - Audit of environmental management systems. Draft International Standard ISO/DIS 14011.

Guidelines for environmental auditing - Qualification criteria for environmental auditors. Draft International Standard ISO/DIS 14012.

B. Organisation for Economic Co-operation and Development (OECD)

Energy conservation policies and technologies in Japan - A survey (OECD/GD(94)32), OECD, Paris, 1994.

C. World Bank

Charles R. Blitzer, R.S. Eckaus, Supriya Lahiri and Alexander Meeraus, **How restricting carbon dioxide and methane emissions would affect the Indian economy,** Report No. WPS 0978, 1992.

Charles R. Blitzer, R.S. Eckaus, Supriya Lahiri and Alexander Meeraus, **Growth and welfare losses from carbon emissions restrictions: a general equilibrium analysis for Egypt,** Report No. WPS 0963, 1992.

Mohan Munasinghe and Peter Meier, **Incorporating environmental concerns into power sector decision making: a case study of Sri Lanka,** Report No. 12966, 1994.

UNITED NATIONS

Framework Convention on Climate Change

Distr.
GENERAL

FCCC/AGBM/1996/4
13 February 1996

Original: ENGLISH

AD HOC GROUP ON THE BERLIN MANDATE
Third session
Geneva, 5-8 March 1996
Item 6 of the provisional agenda

POSSIBLE FEATURES OF A PROTOCOL OR ANOTHER LEGAL INSTRUMENT

Institutional issues

Note by the secretariat

CONTENTS

		Paragraphs	Page
I.	INTRODUCTION	1 - 4	3
	A. Mandate	1	3
	B. Scope of the note	2 - 3	3
	C. Possible action by the Ad Hoc Group on the Berlin Mandate	4	4
II.	REVIEW OF INSTITUTIONS AND PROCESSES ESTABLISHED UNDER THE CONVENTION AND THEIR POSSIBLE RELATIONSHIP TO A PROTOCOL OR AN AMENDMENT	5 - 21	4
	A. Conference of the Parties	7 - 10	5
	B. Secretariat	11	5
	C. Subsidiary bodies established by the Convention	12 - 14	6

		Paragraphs	Page
D.	Financial mechanism	15	6
E.	Communication of information	16	7
F.	Multilateral consultative process	17 - 18	7
G.	Dispute settlement procedures	19	8
H.	Rules of procedure and financial procedures	20 - 21	8
III.	OTHER ISSUES	22	8

Annex

	Procedures relating to a protocol and an amendment	-	9

I. INTRODUCTION

A. Mandate

1. At its second session, the Ad Hoc Group on the Berlin Mandate (AGBM) requested the secretariat "to examine how institutions and processes established by the Convention could be linked to a future protocol or another legal instrument ... ". In its preliminary discussion of this matter, the AGBM identified a number of issues that may need to be taken into consideration, including institutional linkages between the Convention and a protocol or another legal instrument; the role of the secretariat; reviews of commitments of Annex I Parties, reporting and review mechanisms; subsidiary bodies; the use of annexes, and the need to avoid duplication and overlap (FCCC/AGBM/1995/7, para. 49). Also at its second session, the AGBM requested a more detailed report on these issues, including a review of existing relevant conventions, for its consideration at its fourth session (FCCC/AGBM/1995/7, para. 52).

B. Scope of the note

2. Pursuant to the above mandate, this first note gives a preliminary overview of some of the general institutional issues and questions arising from the possible adoption of either a protocol or an amendment to the Convention.[1] The annex to this note lists some of the procedural distinctions between a protocol and an amendment. The note does not address instruments of a quasi-legal, or 'soft law,' nature that could be considered for adoption by the COP, for example, decisions, resolutions and declarations, and guidelines; nor does it address the option of a completely separate legal instrument.

3. Parties will need to consider which type of instrument would be most viable in the current context - a protocol or an amendment or another legal or quasi-legal instrument. The institutional mechanisms will largely depend on the choice of instrument and the type of substantive commitments it will contain. The consequential choices between the establishment of new institutions and the adaptation of existing ones, established by and under the Convention, will also need to be addressed as the negotiations progress. This note assumes that Parties, in the interest of administrative efficiency and in the light of budgetary constraints, would prefer to avoid the establishment of new institutions in a protocol regime unless essential.

---

[1] Parties may also wish to review the discussion on institutional issues raised by Parties and summarized in paragraph 32 of the annex to document A/AC.237/65 on Matters relating to commitments: review of the adequacy of commitments in Article 4, paragraph 2 (a) and (b), prepared for the tenth session of the Intergovernmental Negotiating Committee. At that session several countries stressed the need for "coherence between the Convention and any amendments and protocols."

C. Possible action by the Ad Hoc Group on the Berlin Mandate

4. The AGBM may wish to undertake a preliminary discussion on this item. More detailed consideration of the institutional arrangements and linkages between the Convention and a protocol or another legal instrument could await the completion of the report which is being prepared for consideration at the fourth session of the AGBM. The AGBM may wish to give guidance on the approach to be followed in that report. It may also be able to reach initial conclusions on certain institutional principles (for example, concerning its preference for either the establishment of new institutions or the use of Convention bodies).

II. REVIEW OF INSTITUTIONS AND PROCESSES ESTABLISHED UNDER THE CONVENTION AND THEIR POSSIBLE RELATIONSHIP TO A PROTOCOL OR AN AMENDMENT

5. This section identifies the institutions and processes established under the Convention and examines the role that each may play in either a protocol or an amended Convention. It may be useful, when considering the institutional linkages between the Convention and a protocol or an amendment, to distinguish between those institutions that have clear decision-making functions and those having advisory or support functions. Clearly the ultimate decision-making authority under a protocol rests with the Parties thereto. However, Convention institutions having advisory functions, notably subsidiary bodies established under and by the Convention, could, if desired, serve the needs of a protocol, thereby avoiding the establishment of new institutions. Similarly, the Convention secretariat could be mandated to support a protocol. In the case of an amendment, the present Convention institutions, including the secretariat, would serve an amendment regime, although some adjustment to their mandates may be needed.

6. The institutions, process and procedures established under the Convention may be identified as the following:

(a) Conference of the Parties (Article 7)
(b) Secretariat (Article 8)
(c) Subsidiary Body for Scientific and Technological Advice (Article 9)
(d) Subsidiary Body for Implementation (Article 10)
(e) Financial mechanism (Article 11)
(f) Communication of information related to implementation (Article 12)
(g) Multilateral consultative process (Article 13) (under consideration)
(h) Dispute settlement procedures (Article 14)
(i) Rules of procedure (currently applied with the exception of rule 42) and financial procedures (decision 15/CP.1)

A. Conference of the Parties

7. The COP is the supreme body of the Convention and is the ultimate decision-making authority. It is assumed that in a protocol regime a separate Conference (or Meeting) of the Parties would be established. In this regard, Article 17.5 of the Convention provides that decisions under any protocol shall be taken only by the Parties to the protocol concerned.

8. Two main issues emerge: the scheduling of meetings and the maintenance of policy coherence. With regard to the former, Parties to the Convention and to a protocol could decide to hold their sessions jointly or concurrently. (See the Montreal Protocol on Substances that Deplete the Ozone Layer and the Sulphur Protocol to the Convention on Long-Range Transboundary Air Pollution. Meetings of the Parties are held yearly and in conjunction with the Conferences of the Parties of the "parent" conventions when they meet in the same year.)

9. The second issue, namely, how substantive and procedural decisions taken by two separate Conferences of the Parties would be coordinated to ensure coherence, is more challenging. Presumably the protocol would be drafted in such a way as to promote this objective. The two Bureaux could also have an important role to play in this regard. The AGBM may wish to explore additional options.

10. With respect to amendments adopted by the COP, two separate regimes could be in effect: the current Convention regime, which all Parties have ratified or acceded to, and the amendment regime, which could have fewer Parties than the Convention. Presumably decisions pertaining to the amended provisions would be taken only by those Parties having "accepted" the amendments. The issue of maintaining coherence between decisions by different groups of Parties may also need to be addressed.

B. Secretariat

11. The work programme of the Convention secretariat could be expanded to serve a protocol regime or an amendment regime. The functions of the secretariat are laid down in Article 8.2 of the Convention, paragraph (g) of which provides scope for the expansion of these functions by stating that [the secretariat] shall "perform the other secretariat functions specified in the Convention and in any of its protocols and such other functions as may be determined by the Conference of the Parties."

C. Subsidiary bodies established by the Convention

12. Parties would need to consider what roles the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) would play in a protocol or an amendment regime. With regard to the SBSTA, Article 9.3 states that "the functions and terms of reference of this body may be further elaborated by the Conference of the Parties." Article 10 contains no such provision with regard to the SBI; however, the COP, pursuant to Article 7.2 "shall keep under regular review the implementation of the Convention and any related legal instrument ... and shall make, within its mandate, the decisions necessary to promote the effective implementation of the Convention." In addition, Article 7.2 (g) provides that the COP shall "make recommendations on any matters necessary for the implementation of the Convention".

13. The main function of the SBSTA is "to provide the Conference of the Parties and, as appropriate, its other subsidiary bodies with timely information and advice on scientific and technological matters relating to the Convention" (Article 9.1). These functions could be adapted to support the needs of a protocol or an amendment regime. Alternatively, the existing SBSTA could be requested, or mandated, to provide advice to the Parties to a protocol. Parties would need to consider whether questions of implementation relating to a protocol would best be handled by the SBI or by a separate subsidiary body established by the protocol.

14. If the SBSTA and/or the SBI were to support a protocol regime, issues relating to, inter alia, membership, election of officers, Bureaus, and decision-making procedures could arise. The AGBM may wish to consider how these might be addressed. If a protocol were to establish its own independent subsidiary bodies, a different type of issue would need to be considered, for example, the implications for the work programmes of the SBSTA and the SBI, coordination between the different regimes and resource requirements for the Convention and individual Parties to support such an arrangement.

D. Financial mechanism

15. The discussions on continuing to advance the implementation of Article 4.1 (see decision 1/CP.1, para. 3 (b)[2]) may have implications for the operation of the financial mechanism of the Convention. For example, in a protocol regime, Parties would need to consider whether any relevant provisions therein would need to be linked to the financial mechanism under the Convention. Parties may also need to consider whether,

---

[2] For decisions adopted by the Conference of the Parties at its first session, see document FCCC/CP/1995/7/Add.1.

in a protocol or an amendment regime, the implementation of the Convention provisions relating to the financial mechanism (for example, the guidance to the operating entity) would need to take into account any relevant new circumstances arising from the instrument.

E. Communication of information

16. The communication and review of information is likely to continue to be an important feature under either a protocol or an amendment. At the same time, the existing provisions of the Convention (see Article 4.1(j) and Article 12) will, presumably, continue to apply. Subsequent COP decisions, (decisions 2/CP.1, 3/CP.1, and 4/CP.1) would need to be reviewed in the light of a protocol or an amendment. In a protocol regime, in order to ensure coherence and avoid duplication, Parties could integrate reporting and review procedures with those already established under Article 12 of the Convention. Conversely, if Parties to a protocol were to find it necessary to establish new and separate arrangements in this regard, they would need to consider carefully what would be the implications for the existing communication and review process. In an amendment regime, Parties may need to consider how the present process should be restructured and/or strengthened.

F. Multilateral consultative process

17. Parties to the Convention have only recently begun their discussions on the possible establishment of a multilateral consultative process pursuant to Article 13 and also to decision 20/CP.1 under which the Ad Hoc Group on Article 13 (AG13) was established with the mandate "to study all issues relating to the establishment of a multilateral consultative process and its design" and "to report its findings to the Conference of the Parties at its second session." The AG13 held its first session in October 1995 and concluded that there was a need for careful and detailed examination of all issues relating to the establishment of such a process. It was concluded that this work would take considerable time and would extend beyond COP 2 (FCCC/AG13/1995/2, para. 16).

18. Although the work of the AG13 will largely concentrate on the possible establishment of a multilateral consultative process under the present Convention, it is clear from the discussions so far that consideration will need to be given to the relationship between such a process and a protocol. In this regard, one of the questions which will need to be addressed in due course by the AGBM, rather than by the AG13, is whether a protocol should include a multilateral consultative process to handle questions of implementation relating thereto and, if so, whether the protocol should rely on a multilateral consultative process which may be established under the Convention or seek to develop a separate process. It is assumed, in this note, that if a multilateral consultative process were to be established by the Convention, it would serve (perhaps in an adapted manner) in an amendment regime.

G. Dispute settlement procedures

19. Article 14.8 of the Convention states that "the provisions of this Article shall apply to any related legal instrument which the Conference of the Parties may adopt, unless the instrument provides otherwise." In consequence, Parties will need to consider whether a protocol should provide for a bilateral dispute settlement procedure that is independent from the Convention. In the case of the Montreal and Sulphur Protocols, the dispute settlement procedures laid down in the respective "parent" conventions are applicable. It is assumed that in an amendment regime, Article 14 could be invoked by those Parties that have "accepted" the amendment, since the amendment regime would fall within the purview of the Convention as a whole.

H. Rules of procedure and financial procedures

20. The Parties to a protocol could decide to develop their own rules of procedure and financial procedures or to apply, mutatis mutandis, the rules of procedure and financial procedures of the Convention. In the latter case, some attention would need to be given to the manner in which budgetary and financial accountability would be ensured. Parties to a protocol or an amendment would pay contributions additional to their Convention contributions. Moreover, certain rules of procedure (for example, with regard to voting) and certain financial procedures would require revision.

21. It is important to note that the servicing of a protocol regime or an amendment regime would have financial and budgetary implications relating to additional meetings, funding for participation, and expanded secretariat work programmes. However, it may be possible to reduce such costs through the use of existing institutions where possible and rigorous efforts to ensure coordination and avoid overlapping and duplication.

III. OTHER ISSUES

22. In addition to the institutional concerns enumerated in this paper, Parties may, in formulating a protocol or another legal instrument, wish to consider several procedural issues. These would be particularly pertinent in relation to the adoption of a protocol which, unlike an amendment, may need to establish, inter alia, its own procedures for amendment, adoption and amendment of annexes, ratification, and entry into force, in addition to separate voting majorities and certain rules of procedure. Parties would also need to give consideration to the final clauses of a protocol, such as provisions governing depositary functions, signature, reservations, withdrawal, and the authenticity of texts. In a protocol, many of these provisions could provide for cross application to the relevant provisions of the Convention except in cases where it may be deemed necessary to establish separate procedures.

Annex

PROCEDURES RELATING TO A PROTOCOL AND AN AMENDMENT

	PROTOCOL	AMENDMENT
1.	May be adopted at any ordinary session of COP. (Article 17.1)	May be adopted at an ordinary session of COP. (Article 15.2)
2.	Text of proposed protocol to be communicated to Parties by the secretariat at least six months before such session. (Article 17.2)	Text of proposed amendment to be communicated by secretariat at least six months before meeting at which it is proposed for adoption. (Article 15.2)
3.	Draft rules of procedure provide for protocol to be adopted by [consensus] [2/3] [3/4] majority vote of Parties present and voting. (Draft rule 42)	May be adopted by consensus, last resort three-fourths majority vote of Parties present and voting. (Article 15.3)
4.	Entry into force requirement to be established by protocol (Article 17.3). Only Parties to the Convention may be Parties to the Protocol (Article 17.4).	Entry into force on 90th day after the date of receipt by Depositary of at least 3/4 of the Parties to the Convention. Amendment enters into force only for those Parties having accepted it. (Article 15.4)
5.	Protocol establishes separate regime from Convention	Since not all Parties to the Convention will necessarily ratify the amendment, it may create two regimes within the Convention.
6.	Protocol may need to establish separate procedures (e.g. rules of procedure, voting).	Convention may need revised procedures to govern amendment regime (e.g. rules of procedure, voting).
7.	Separate Conference or Meeting of the Parties for the Protocol?	Existing Conference of the Parties would be able to serve amended regime.
8.	Protocol may need to establish some separate institutions and subsidiary bodies.	Convention institutions may accommodate amendment regime.
9.	Protocol regime would not change Convention provisions.	Amended regime could require consequential changes to other provisions of the Convention.

- - - - -